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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/876,233	06/08/2001	Alfred Ludwig Heinz	APV30268C	6197

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EXAMINER

COMBS, JANELL A

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 07/31/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/876,233

Applicant(s)

HEINZ ET AL.

Examiner

Janelle Combs-Morillo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 24-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 and 37-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6 and 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-23 and 37-39, drawn to aluminum alloy product, classified in class 420, subclass 532.
 - II. Claims 24-36, drawn to process of working and heat treating aluminum, classified in class 148, subclass 693.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by a materially different process such as extrusion.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Anthony Venturino on July 18, 2002 a provisional election was made with traverse to prosecute the invention of group I, claims 1-17 and 28-30. Affirmation of this election must be made by applicant in replying to this Office action. Claims 18-27 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 38 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 38 is dependent on non-elected process claim 24. The examiner suggests inserting the limitations of claim 24 into claim 38. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-23, 37, and 39 are rejected under 35 U.S.C. 103(a) as obvious over *ASM*

Handbook: Vol. 2 Properties and Selection: Nonferrous Alloys and Special-Purpose Materials

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(ASM Vol 2) alone or with *ASM Handbook: Vol. 9 Metallography and Microstructures* (ASM Vol 9).

Aluminum Association alloys 2024 and 2124 entirely overlap the presently claimed alloy composition (see ASM Vol. 2 page 70 and 74 and Table below). ASM Vol. 2 teaches that 2024 and 2124 typically exhibits YS values within the presently claimed limits (see Table below).

	present invention	2024	2124
	claims 1 and 39		
Cu	3.8-4.9	3.8-4.9	3.8-4.9
Mg	1.2-1.8	1.2-1.8	1.2-1.8
Mn	0.1-0.9	0.3-0.9	0.3-0.9
Fe	0.12 max.	0.50 max.	0.30 max.
Si	0.1 max.	0.50 max.	0.20 max.
Ti	0.15 max.	0.15 max.	0.15 max.
Zn	0.20 max.	0.25 max.	0.25 max.
Cr	0.10 max.	0.10 max.	0.10 max.
impurities ea	0.05 max.	0.05 max.	0.05 max.
impurities total	0.15 max.	0.15 max.	0.15 max.
YS (L)	≥ 300 Mpa	490 Mpa (T861) 345 Mpa (T3)	440 Mpa (T851)
YS (LT)	≥ 270 Mpa	not given	435 Mpa (T851)
$K_{C(a0)}$	$100 \text{ Mpa} \cdot \text{m}^{0.5}$	not given	not given

Concerning the $K_{C(a0)}$ and YS (LT) and optionally grain size, the examiner asserts that “products of identical chemical composition can not have mutually exclusive properties.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). A chemical composition and its properties are inseparable. Where the claimed and prior art products are identical or substantially identical in structure or composition, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Therefore, if the prior art teaches the identical chemical structure, the properties applicant

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discloses (such as $K_{c(a0)}$ and YS (LT) and optionally grain size) and/or claims are necessarily present.

ASM Vol 2 does not specify the average grain size of said AA2024 or AA2124 alloys. However, ASM Vol 9, gives typical micrographs of 2024-T3, 2024-T6, and 2024-T851 in the L and LT directions. ASM Vol 9 shows the average grain size of 2024 is clearly $\leq 45\mu\text{m}$ (which corresponds to ASTM micrograin size number of at least 6). For example, Fig. 46 on page 365 of ASM Vol 9 shows AA2024-T851 magnified 500x. In order to compare the scale of the present micrograph to μ , the examiner submits that

$$45\mu\text{m} * 500 = 22.5 * 10^3 \mu\text{m} = 22.5\text{mm}$$

and because the average grain size exhibited in Fig. 46 is clearly $\ll 22.5\text{ mm}$, the examiner asserts that the condition that an average grain size of at least 6 has been met. Note that the average grain size in micrographs 43 and 44, magnified 200x, is clearly $< 9\text{mm}$.

It is held that ASM Vol 2 has created a prima facie case of obviousness of the presently claimed invention because the ASM Vol 2 teaches an overlapping alloy composition, and one of ordinary skill in the art would expect the same characteristics (including $K_{c(a0)}$, YS (LT), and grain size) to be present in the prior art alloys as in the presently claimed alloy. Alternatively, because ASM Vol 2 and ASM Vol 9 are both drawn to AA2024 alloys in the T851 temper, it is within the level of one of ordinary skill in the art to obtain a AA2024-T851 alloy with the presently claimed mechanical characteristics (ASM Vol 2) and grain structure (ASM Vol 9).

Concerning dependent claims 2-5, the examiner asserts that AA2024 and AA2124 overlap the presently claimed composition ranges.

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Concerning dependent claims 6-10, which are drawn to mechanical characteristics (see Table below) of said alloy, the ASM Vol 2 teaches that 2024 and 2124 overlap the presently claimed YS and TS. As stated above (and concerning the $K_{c(a0)}$ and YS (LT)) the examiner asserts that “products of identical chemical composition can not have mutually exclusive properties.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore one of ordinary skill in the art would expect the same properties to be present for the presently claimed alloy composition, as in the prior art compositions.

Concerning dependent claims 11-13, the examiner points out that a ASM Vol 9 teaches that 2024-T851 plate, as seen in micrographs 43 (LT) and 44 (L), exhibit a grain aspect ratio $\leq 1:2$.

Concerning dependent claims 14, 15, and 37, the examiner asserts that ASM Vol 2 teaches that 2024 and 2124 are typically plate and sheet (Table 25, etc.) stock used for aircraft structures (page 70 and 74, under “Applications”).

Concerning dependent claims 16 and 21, the examiner points out that ASM Vol 9 shows the grain sizes typical for a variety of tempers. It is within the disclosure of ASM Vol 9 to obtain

	present invention						2024	2124
	claim 1 and 39	6	7	8	9	10		
YS (L)	≥ 300 Mpa	≥ 360 Mpa			≥ 360 Mpa	≥ 360 Mpa	490 Mpa (T861) 345 Mpa (T3)	440 Mpa (T851)
YS (LT)	≥ 270 Mpa	≥ 300 Mpa			≥ 300 Mpa	≥ 300 Mpa	not given	435 Mpa (T851)
TS (L)			≥ 475 Mpa					
TS (LT)			≥ 440 Mpa					
$K_{c(a0)}$	$100 \text{ Mpa}\cdot\text{m}^{0.5}$			$105 \text{ Mpa}\cdot\text{m}^{0.5}$	$170 \text{ Mpa}\cdot\text{m}^{0.5}$	$175 \text{ Mpa}\cdot\text{m}^{0.5}$	not given	not given

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a grain size within the presently claimed ranges (see discussion above, and esp. ASM Vol. 9 Fig. 36, 46, etc.).

Concerning claims 17-20, which are drawn to the elongation to fracture in the L or T directions, the ASM Handbook Vol 2 teaches 2024T3 obtains an elongation (L direction)=17%, which falls within the presently claimed values. The ASM Handbook Vol 2 does not teach the elongation in the T direction, however, one of ordinary skill in the art would expect the same properties to be present for the presently claimed alloy composition, as in the prior art compositions, because of the substantial overlap in alloying ranges (see also discussion above).

Concerning dependent claims 22 and 23, the examiner asserts that AA2024 is typically clad with a higher purity, more corrosion resistant alloy such as AA1230 (see ASM Vol 2, page 70, Chemical Composition of Alclad 2024).

6. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over *ASM Handbook: Vol. 2 Properties and Selection: Nonferrous Alloys and Special-Purpose Materials* (ASM Vol 2) alone or with *ASM Handbook: Vol. 9 Metallography and Microstructures* (ASM Vol 9), as applied to claim 1 above.

With regard to the process steps of claim 38, it is well settled that a product-by-process claim defines a product, and that when the prior art discloses a product substantially the same as that being claimed, differing only in the manner by which it is made, the burden falls to applicant to show that any process steps associated therewith result in a product materially different from that disclosed in the prior art. See *In re Brown* (173 USPQ 685) and *In re Fessman* (180 USPQ 524). Therefore, it is held that the 2024 or 2124 alloy product taught by ASM Vol 2

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(alternatively in view of ASM Vol 9) has created a prima facie case of obviousness of the presently claimed invention.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-23 and 37-39 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 and 28-30 of copending Application No. 09/845181. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of copending Application No. 09/845181 are drawn to an identical alloy composition, which entirely overlap the presently claimed alloy composition.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (703) 308-4757. The examiner can normally be reached on 7:30 am- 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (703) 308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7719 for regular communications and (703) 305-7719 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

GEORGE WYSZOMIERSKI
PRIMARY EXAMINER


jcm
July 18, 2002